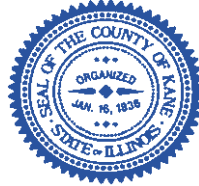


# COUNTY OF KANE

**DEVELOPMENT & COMMUNITY  
SERVICES DEPARTMENT  
PLANNING & SPECIAL PROJECTS DIVISION**  
Kai Tarum, Director



County Government Center  
719 Batavia Avenue  
Geneva, Illinois 60134  
Phone: (630) 232-3480  
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March 16, 2010

Ms. Dawn Thompson  
Chicago Metropolitan Agency for Planning  
233 South Wacker Drive  
Suite 800, Sears Tower  
Chicago, IL 60606

RE: CMAP Water Quality Review Number 10-WQ-004  
Village of Big Rock

Dear Ms. Thompson:

Today, the Development Committee of the Kane County Board made a determination regarding the Big Rock Water Quality Management Plan Amendment Proposal to the *Illinois Water Quality Management Plan* and the *Areawide Water Quality Management Plan for Northeastern Illinois*. The Committee voted unanimously to recommend approval.

The attached memorandum details the rationale behind the Committee's decision. As noted:

The proposed FPA creation is consistent with the goals of the 2030 Land Resource Management Plan and meets the technical standards for long term sustainable and consistent wastewater treatment in an environmentally sound manner.

Respectfully,

Kai Tarum  
Director of Planning & Special Projects  
Kane County Development Department

cc: Sandy Bell, Village of Big Rock

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## MEMORANDUM

DATE: March 16, 2010

TO: Development Committee

FROM: Kai Tarum  
Karen Miller  
Jodie Wollnik, P.E.

RE: Village of Big Rock Water Quality Management Plan Amendment Application under the *Areawide Water Quality Management Plan for Northeastern Illinois*; CMAP Water Quality Review Number 10-WQ-004

The Village of Big Rock has requested that the Chicago Metropolitan Agency for Planning (CMAP) consider the creation of a Facility Planning Area (FPA) over 285 acres within the Village of Big Rock. The proposed FPA would include:

- the north study area which encompasses the original residential village north of the railroad tracks,
- the south study area which encompasses the original residential village south of the tracks, and
- the US Route 30 Corridor area which encompasses the school and the industrial and commercial development along Route 30 to the east of the original village (see attached exhibit).

As the "Wastewater Facilities Plan" (January, 2010) notes, "these areas encompass most of the currently developed portions in the Village of Big Rock. Most of the homes and businesses in the study areas were constructed between the years 1870 and 2000, with a median of 1928".

The village proposes to serve the planning area using individual septic tanks and pressure sewers that will route the wastewater to a central sand filtration plant with UV disinfection. The wastewater will ultimately be discharged to Big Rock Creek.

The Village of Big Rock request includes the following:

- Transfer 285 acres of land from non-FPA areas into the newly created Village of Big Rock FPA (See attached map);
- Develop a wastewater collection system using individual septic tanks and effluent pumps (STEP system) with pressure sewers discharging to the Water Reclamation Facility; and
- Develop the Water Reclamation Facility which will consist of a recirculation tank, recirculating sand filter, ultraviolet disinfection and a meandering stream bed with wetland vegetation before discharge to Big Rock Creek.

Staff has reviewed the Village of Big Rock Wastewater Feasibility Study (February 2009), the Village of Big Rock Wastewater Facilities Plan (January 2010) and the Village of Big Rock Water Quality Management Plan Amendment Application (January 2010). Furthermore, Kane County has not requested that CMAP hold a Public Hearing regarding the application given the close coordination that has occurred between the Village and the County throughout this process.

#### Population Projections for Big Rock

CMAP's "Criteria for Facility Amendments to the Areawide Water Quality Management Plan for Northeastern Illinois" includes a requirement that the "the population and employment for which the proposed amendment is designed must fall within the twenty-year forecasts...or [CMAP] may agree to adjustments within the regional forecast total".

CMAP's 2030 population forecast for the Village of Big Rock totals 859, which anticipates minimal growth relative to the 2008 estimated population of 736 (the village was not incorporated for the 2000 census). The village adopted a Comprehensive Plan in 2003, which anticipates some development and slightly greater population growth than CMAP's forecast. However, the Village of Big Rock Wastewater Facilities Plan (January 2010) provides the most recent and realistic forecasts for the proposed FPA, which includes only part of the existing village and very little vacant land.

The chart below offers data (and lack thereof) about the village's population, and about the proposed FPA which is limited to the densest area of the current municipality. The village has annexed a significant amount of farmland since incorporation, but these areas are not included in the proposed FPA, nor are newer large-lot residential areas. According to the Amendment Application, "of the proposed 189 parcels there are 29 vacant residential parcels and 7 commercial parcels in the FPA that are included for future expansion". The proposal is clearly targeted to fixing an existing problem and providing service to the core area of the existing village.

	Village of Big Rock 2008*	Village of Big Rock 2030**	Proposed FPA 2009*** (Partial Village)	Proposed FPA 2030*** (Partial Village)
<b>Households</b>	N/A	N/A	N/A	149
<b>Employment/ Jobs</b>	N/A	N/A	N/A	127
<b>Population</b>	736	859	351	436
<b>Total P.E.</b>				563

N/A = Information not available.

\* = U.S. Census Bureau estimate

\*\* = CMAP projection

\*\*\* = Village of Big Rock Wastewater Facilities Plan

### Wastewater Treatment and Disposal Alternative Proposals

The Village of Big Rock hired Applied Technologies, Lake Villa, Illinois to complete a Facility Planning Report for the Village and subsequently the Feasibility Study, Facilities Plan and CMAP application.

The option for "No Action" was quickly eliminated given the combined storm and sanitary drain tile on the south side of Big Rock that discharges into Big Rock Creek and the north side septic leach fields that are leaking into the drain tile system. In addition, the average age of the septic systems in the Village is 40 years, which is well beyond their useful lives. Land application as a disposal method for the treated effluent was also eliminated due to the potential for negative impacts on groundwater quality as many of the soils in the Big Rock area are hydric with a high groundwater table. These soils are not suitable for land application.

In total, there were six wastewater management alternatives that were identified and a cost-effectiveness evaluation and non-monetary evaluation (which considered environmental impacts) were performed. The combination of STEP pressure sewers, Recirculating Sand Filter Treatment and discharge through a meandering stream bed to Big Rock Creek was recommended based on the analysis. The capital cost of the collection and treatment system is estimated to be \$3,444,000.

### Project Funding

In January of 2008, the Village applied for and subsequently received, from Kane County, a Community Development Block Grant (CDBG) for the planning effort. In addition to the CDBG funds, the Village also received a \$167,300 U.S. EPA Special Appropriations Grant which they are looking to match with Village and potentially Riverboat funds to move forward with the engineering work for the NPDES discharge permit and preliminary plans. The Village is pursuing a grant from the IEPA Unsewered Communities fund along with a WPCLP loan for the construction of the project.

### Consistency with the 2030 Land Resource Management Plan

The proposed FPA is located within Kane County's Agricultural/Rural Village Area which emphasizes recommitment to preserving agricultural areas and open space. The Village of Big Rock Future Land Use Map, adopted in 2003, shows most of the incorporated area as remaining agricultural.

The proposed FPA, however, encompasses the existing core of the village with few vacant parcels included. By improving the quality of life within the existing village, the proposal is generally consistent with the County's 2030 Land Resource Management Plan.

The Village of Big Rock Water Quality Management Amendment plan is furthermore consistent with the stated objectives in the Water Resources section of the 2030 Plan which include the following:

- To preserve and protect the quantity and quality of potable groundwater and potable surface water supplies;
- To protect and improve the surface water quality and beneficial uses of ponds, lakes, river, streams and wetlands; and
- To reduce point and non-point source discharges of pollutants into lakes, rivers and streams.

The age and condition of the individual septic systems within the study area, in addition to the drain tiles serving those areas, are presently negatively impacting both the shallow groundwater quality and surface water quality in Welch and Big Rock Creeks. The collection and treatment of the wastewater as proposed in this Amendment will protect the water quality of the individual wells in the community. Furthermore, the high level of treatment through the proposed recirculating sand filter and meandering streambed wetland will provide a high quality effluent at the creek.

In short, this proposal would provide a solution to a long-term problem in the Village of Big Rock. Kane County has been supporting the search for this solution through technical and financial support, as it is consistent with the 2030 Land Resource Management Plan.

**The proposed FPA creation is consistent with the goals of the 2030 Land Resource Management Plan and meets the technical standards for long term sustainable and consistent wastewater treatment in an environmentally sound manner. Staff recommends the following action to be considered by the Development Committee.**

#### **Recommended Action:**

**The Development Committee of the Kane County Board recommends to CMAP the approval of the Village of Big Rock Water Quality Management Plan Amendment.**





**FIGURE 2-3**  
**FACILITIES PLANNING AND STUDY AREAS**  
Village of Big Rock